US Army Corps of Engineers ®
Portland District

TAG Meeting Minutes

Date: 03 August 2020, 11:00 am to 12:00 pm, Teleconference

Project: Bradford Island

Subject: Technical Advisory Group Meeting Minutes

Prepared By: USACE

AGENCY	ATTENDEES
USACE	Chris Budai, Dan Carlson, Kristen Kerns, Bill Gardiner, Katie Richwine, Ken Duncan, Alison Suess, Craig Johnson, Ida Royer
Oregon Dept. of Environmental Quality (DEQ)	Bob Schwarz, Mike Poulsen, Jennifer Peterson, Heidi Nelson
Yakama Nation Fisheries (YNF)	Laura Shira, Bob Dexter
Sky Environ	(not represented)
Ridolfi	Bill Beckley (on behalf of YNF)
WA Department of Ecology	Andy Smith
Bonneville Power Admin. (BPA)	(not represented)
US Fish and Wildlife Service (USFWS)	Jeremy Buck
Nez Perce	Marissa Merker
Confederated Tribes of the Umatilla Indian Reservation	(not represented)
Oregon Health Authority	(not represented)
USEPA	Sean Sheldrake
United States Geological Survey (USGS)	Toby Kock
Confederated Tribes of Warm Springs (CTWS)	(not represented)

1) Fish Sampling Reference Area Considerations
    a. Dan – Meeting purpose is to have further discussions on what to use as a reference area for the fish sampling. Specifically, if the forebay is used as the reference area, how fish populations in the forebay proper would be distinguished from what would be considered fish populations for the site.
    b. Kristen – We're considering how best to conduct data analysis if we use the Forebay as a reference area. Outlier tests are an option. How would we deal with fish in the 100-400 (µg/kg) concentration range, and distinguish contaminated fish between Bradford Island and the other areas around the forebay. Want to hear specific thoughts on options.
    c. Bill – When we looked at the entire forebay, it was considered one population in 2011. Some folks see information suggesting that there are subpopulations within that larger forebay area (including Bradford Island and Goose Island). We're starting to be on board

with that idea. What kind of statistical analysis can we choose to justify identifying the different subpopulations? If we have a fish from the forebay area with a higher concentration – how do we identify whether that represents the "reference" condition or a fish exposed at the Site?

d. Jeremy – We have this background reference issue with outliers whether we're in the originally proposed upstream location or the forebay area. Selecting outliers can be done with a number of statistical methods, such as box plots. We can decide as a group which outliers to exclude, or which would still be valid in a true reference population. Where that breaking point is, is the biggest question. We can look at the existing data for bass and other places in the river. For PCBs, you could forego the reference analysis altogether and just use a background concentration, somewhere between 60 to 120 µg/kg. If that makes sense for folks, we can just go with that background concentration for PCBs.
e. Jennifer – For bass, it's more complicated. For sediment, crayfish, and clams, the Corps have used samples from river mile 147 and above in the past. Has the Corps thought about using the previous data at river mile 147?
f. Kristen – In the current QAPP, our focus has been at the reference area used previously just outside Cascade Locks. We didn't think about coming further downstream. For the bass, it's problematic in my mind if the reference area is inside the dominant home range for Bradford Island bass. Given the mobility of the bass, we've been targeting that more upstream location by Cascade Locks.
g. Jennifer – There are outlier issues there, as Jeremy mentioned. Using upstream from Goose Island may be more appropriate because it could provide background that's closer to the site. It could provide a reference from a population within range of the forebay. It's just upstream of the area of interest but doesn't require going all the way up to Cascade Locks.
h. Andy – Where you guys originally thought to put the reference area, there is a site right next to that location. It doesn't have a lot of information. I think it's a plywood mill. I don't know how that impacts what you were planning. Need to look at historic database.
i. Kristen – We looked into DEQ and Ecology databases and there wasn't a lot of information. There was no sediment information. We weren't able to identify sites with clear PCB impacts. I know for Oregon there is a Herman Creek site, but their reference site had PCB detections and it wasn't clear what their site PCB concentrations were. I agree we'll still have outliers upstream, my thought is we pick a reference site, identify outliers to determine what is true reference, and use that as an indication. I still struggle with how to distinguish between what are reference fish from the Site and fish in the Forebay.
j. Jennifer – Is the goal to identify a decision point concentration?
k. Kristen – The focus is to revise and update the CSM and confirm if we still have an active primary source at Bradford Island for bass.
l. Jennifer – I think we have different objectives for how to use the data. I think we already identified there's a source off Bradford that's statistically different from reference. I thought we wanted to collect more information from Bradford Island and the forebay to narrow down where the primary contamination is. I get concerned we're redoing parts of the RI.
m. Kristen – I don't think of this as redoing the RI. We are trying to update the CSM and get a current understanding of the components of the CSM. We did the initial passive sampling effort. This effort would complement the passive sampling effort. In terms of finding a source, the clams and crayfish do a great job of that, but the bass are mobile. So we're more trying to confirm if the bass are still getting exposure to high sources.
n. Jennifer – What decision comes out of not finding high concentrations in bass?

o. Kristen – We'd look at the other data sources. The clams, crayfish, and passive sampling results. We'll have to also do additional sediment sampling at some point. I don't think the bass data will be defining.
p. Bill – We're trying to update the CSM. This is one piece of it.
q. Jeremy – I think that's a good approach. Focusing on bass as more mobile, and clams and crayfish to isolate sources. Determine if there is a statistical difference or if the exposed area is above background. If there's still an exposed population then looking at the next lines of evidence. Even if there isn't a difference in the bass, we'll still go to the next phase to look at clams and/or crayfish. I think breaking it up into decision units makes sense. And focusing on the decision units that still show a pattern on contamination for developing a trigger point and narrowing down area of remediation. I don't see a big deal if there's a statistical difference or not for the bass sampling as a reference, I don't find it too helpful until there is a background level that is exceeded. I think it's reasonable to expect some level of contamination. I assume there will be a statistical difference no matter what you do. It will also be difficult to normalize your data when you have huge outliers. It might be more useful to see if results are greater than background levels, using a concentration to make decisions on (trigger point). Once you have that trigger point, the process becomes rather simple and you can use a t-test to compare the Site to that reference level.
r. Bill – Sean, do you have any thoughts on anthropogenic background?
s. Sean – I agree with Jenn, Jeremy, and Kristen. I don't have anything different to add. My overarching concern is related to resources. CSM refinement should be done first before finding sources. Source issues may deserve higher priority than a longitudinal study. It sounds like the focus in the forebay area will help focus those resources. I think Jeremy's right that it'd be good to decide how the data will be analyzed and interpreted before the data is collected.
t. Laura – We share the same concerns as USFWS, DEQ, and EPA.
u. Bob D. – I agree with Sean and Jeremy with the primary issue as resource allocation as to where you spend the limited money available. From looking at the last data, it seems to be dramatically contaminated directly around Bradford Island. There have been a number of studies of smallmouth bass in the Columbia and near the dam in recent years and I wonder if they would be adequate for answering reference questions.
v. Bill – There is a shared objective to hone in on the source areas, and get a sense of what the concentrations in bass are now, where they are exposed and how that influences our CSM. Jeremy laid out 3 approaches that make sense, and we need to think about which approach to use. I think the breaking point that Jeremy referred to is tricky – it may work for PCBs but not other contaminants. We've looked at both the historical data sets and some of the other bass study data. There isn't a lot of other smallmouth bass data – if anyone else has useful data please send it out to the group.
w. Kristen – I hear the concern to focus our resources on forebay bass. Is anyone opposed to the possibility of collecting farther upstream reference bass at a later date if needed? Either in the Spring, or a year later during the following Fall?
x. Jeremy – It would have to be a year later I think, for the same time of year. I don't think a year will make a big difference in changes of PCB concentrations.
y. Jennifer – I would agree with Jeremy.
z. Bob D. – I would agree. I would focus more on putting resources into the clams and crayfish that might better demonstrate whether Bradford Island is the source, as opposed to more bass samples.

aa. Jennifer – I agree with Bob. But I think it's also important to know that bass aren't present at very high concentrations. There's no natural attenuation possible. I think we have to collect enough bass around Bradford for a statistical analysis to be confident that concentrations have changed or not and to clear the site. Focus should be to get enough bass to re-characterize that condition.

bb. Bob D. – I agree, but I don't know if it requires that many bass. It seems there might be a big overlap with 40 fish off Bradford Island and then 40 in the Forebay. I haven't looked at it statistically though.

cc. Jennifer – I haven't either. But we should make sure we have enough bass from Bradford Island and from Goose Island.

dd. Jeremy – I think it's helpful to at least target that many as it's likely we won't get that many anyway. Be careful about separate source at Goose Island.

ee. Jennifer – We must try to separate Bradford Island and Goose Island.

ff. Bill – An ongoing concern by this group is to have a high enough sampling number to know we are collecting a representative sample and to answer questions. We also need the clam and crayfish to be robust enough to look at them separately. Catch per unit effort will also drive where fish are collected and how data will be analyzed. We might end up catching more fish than we expected near Bradford Island. We might not catch enough fish and will need to discuss if that happens.

gg. Jeremy – We should establish a threshold value for outliers. There are different options available. You can use visual graphics to identify outliers, and decide as a group what outliers to exclude. Another option would be to look at skewness of data. Regardless of the option chosen, the group will need to agree on the threshold for outliers. I think the options are clear on how to exclude potential outliers. And then using lines of evidence from other sites in the Columbia River to make sure those potential outliers should be excluded or not. We could look at other species of fish in addition to bass in the Columbia, to confirm they are in the background concentration range. I'm not sure if the Corps would accept using other fish data or if it would have to be bass.

hh. Bill – The preference would be to stick with bass. We could look at other species but would prefer fish with similar life history, prey, and habitat. We haven't looked at what other species we could include. We could if we want to look at other datasets. The issue is what's available.

ii. Jeremy – The process and decisions are easier if a threshold is established. I would push for that. In my opinion, with 209 congeners, there may not be much difference with a 40 point spread between 80 and 120 (µg/kg). Arguing within a certain range may not be that helpful. We might want a round number and to accept some of the noise in the data.

jj. Bill – We're seeing the same range in the historical data, around 80 to 120 (µg/kg). I think they've been a bit lower up river.

kk. Dan - To summarize, I think we're in agreement that we can use the forebay proper area as a reference area, and also as a way to increase our fish catch in the Bradford Island and forebay area to reconfirm bass conditions. Jeremy provided different recommendations for distinguishing background for the forebay that we will have to look into.

ll. Bill – We will also evaluate Jeremy's other recommendation for potentially using a background concentration instead.

mm. Dan – The QAPP comments are due by COB today.

2) Other Items

Dan – The next TAG meeting is scheduled for August 18th, 10am-12pm.